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FAX TRANSMITTAL SHEET

February 21, 2006

TO: Examiner Quiluddin Ghulamali
GAU 2637
U.S. Serial No. 10/620,477

Company:

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FROM: Steven P. Wignore

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Notes/Comments:

Documents Submitted Via Facsimile:

Applicant: Andrew Joo Kim et al.

Serial No.: 10/620,477

Filed: July 15, 2003

For: Adaptive Noise Filtering and Equalization for Optimal High Speed Multilevel Signal Decoding

Papers Faxed: PTOL-85 Issue fee form in Duplicate (2-pgs.); Comments on Statement of Reasons for Allowance Filed Pursuant to 37 CFR § 1.104(e) and MPEP § 1302.14 (5 pgs.)

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PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Andrew Joo Kim et al.

Serial No. 10/620,477

Filed: July 15, 2003

For: Adaptive Noise Filtering and
Equalization for Optimal
High Speed Multilevel
Signal Decoding

Art Unit: 2637

Confirmation No. 8614

Examiner: Ghulamali, Qutbuddin

**COMMENTS ON STATEMENT OF REASONS
FOR ALLOWANCE FILED PURSUANT TO 37 CFR § 1.104(e) and MPEP § 1302.14**

Commissioner for Patents
Mail Stop Issue Fee
Alexandria, VA 22313-1450

February 21, 2006

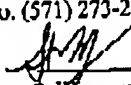
Sir:

Pursuant to 37 C.F.R. § 1.104(e), the Applicants are submitting the following comments which are requested to be made part of the Official file history for this patent application:

Comments on Statement of Reasons for Allowance

The Applicants respectfully submit that the Examiner's Reasons for Allowance that were attached to the Notice of Allowance mailed on December 14, 2005 DO NOT PROVIDE information that is equivalent to the information contained in the application file in which the Examiner's Office actions and the Applicants' replies make evident the Examiner's reasons for allowing the claims.

I hereby certify that this correspondence is being facsimile transmitted to: Commissioner for Patents, Mail Stop Issue Fee, P. O. Box 1450, Alexandria, VA 22313-1450, GAU 2637, Attn: Examiner Qutbuddin Ghulamali, Facsimile No. (571) 273-2885 on February 21, 2006.


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Serial No. 10/620,477

The Applicants repeat the Examiner's reasons for allowance as follows for discussion purposes:

"With reference to claims 1, 10, and 20, the prior art of record in combination with other claimed limitations, neither teaches nor renders obvious a system for processing digital signals comprising:

a signal conditioning filter comprising a first stage for mitigating degradations of a digital signal that occur according to a first time scale, the first stage comprising a linear tapped-delay line filter tuned to the first time scale, the first time scale comprising a fraction of the period at which the symbols are propagated, and a second stage for removing signal distortions [sic] occur according to a second time scale, the second stage comprising a linear tapped-delay line filter tuned to the second time scale, the second time scale being different than the first time scale and comprising a magnitude at least equal to the period at which the symbols are propagated; and a signal integrity unit for controlling the signal conditional filter by maximizing fidelity of the digital signals.

Such limitations, as recited in independent claims 1, 10, and 20, are neither anticipated nor rendered obvious by the prior art of record."

The Examiner's reasons for allowance listed above do not clearly address the combination of elements presented in independent Claims 10 and 20. That is, the Examiner's reasons for allowance closely track the elements independent Claim 1, however, the Examiner's reasons do not address several different elements recited in independent Claims 10 and 20.

As one example, the Examiner's reasons for allowance do not address the first filter stage of independent Claim 10 in which a first linear tapped-delay line filter is tuned to a first time constant that is less than a symbol period and that integrates over less than a symbol period in order to substantially reduce at least one of ringing, jitter, and noise. The Applicants acknowledge that independent Claim 10 has elements that are similar to Claim 1 but Claim 10 also has different elements as discussed above and that will become apparent from the claim itself that is listed below.

Similarly, as another example, the Examiner's reasons for allowance do not address a cascade of two linear filters of Claim 20 wherein each filter comprises a series of variable gain

Serial No. 10/620,477

amplifiers connected by delay elements. The Applicants acknowledge that independent Claim 20 has elements that are similar to Claim 1 but Claim 10 also has different elements as discussed above and that will become apparent from the claim itself that is listed below.

To assist the public's understanding of the unique combination of elements set forth in each independent claim, the Applicants have provided a copy of the three independent claims below.

1. A system for processing digital signals comprising symbols propagated according to a period, the system comprising:
 - a signal conditioning filter comprising a first stage for mitigating degradations of a digital signal that occur according to a first time scale, the first stage comprising a linear tapped-delay line filter tuned to the first time scale, the first time scale comprising a fraction of the period at which the symbols are propagated, and a second stage for removing signal distortions that occur according to a second time scale, the second stage comprising a linear tapped-delay line filter tuned to the second time scale, the second time scale being different than the first time scale and comprising a magnitude at least equal to the period at which the symbols are propagated; and
 - a signal integrity unit for controlling the signal conditioning filter by maximizing fidelity of the digital signals.

10. A system for processing digital signals comprising:
 - a first filter stage comprising a first linear tapped-delay line filter tuned to a first time constant, the first time constant comprising a value that is less than a symbol period, for compensating for signal distortions that occur within a single symbol period and for integrating over less than a symbol period in order to substantially reduce at least one of ringing, jitter, and noise; and
 - a second filter stage comprising a second linear tapped-delay line filter tuned to a second time constant, the first time constant being smaller than the second time constant and the second time constant comprising value at least equal to a symbol period, the second filter stage for removing inter-symbol interference (ISI).

Best Available Copy

Serial No. 10/620,477

20. A system for processing digital signals comprising symbols propagated according to a period, the system comprising:

a cascade of two linear filters, where each filter comprises a series of variable gain amplifiers connected by delay elements, each delay element for a respective filter having a same delay value, each linear filter equalizing a particular frequency band of a multilevel signal;

the delay elements in the first filter being tuned to a fraction of the symbol period at which the symbols are propagated for compensating for signal distortions that occur within a single symbol period and for integrating over less than a symbol period in order to substantially reduce at least one of ringing, jitter, and noise;

the delay elements in the second filter being tuned to a magnitude at least equal to the symbol period at which symbols are propagated for mitigating degradations that occur according to the period.

The Applicants are submitting these comments so that if the claims listed above are ever litigated, it will be understood that the independent claims of this application have varying degrees of scope and unique combinations of elements that are not found in the prior art.

Conclusion


In light of the remarks and full listing of the independent claims above, it is clear that the Examiner's Reasons for Allowance that were attached to the Notice of Allowance mailed on December 14, 2005 DO NOT PROVIDE information that is equivalent to the information contained in the application file in which the Examiner's Office actions and the Applicants' replies make evident the Examiner's reasons for allowing the claims.

Best Available Copy

Serial No. 10/620,477

This paper makes it apparent that each allowed independent claim has a unique combination of elements that is patentable over the prior art of record.

Respectfully submitted,


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